

## INDUSTRIAL MANAGEMENT & TECHNOLOGY

### Not Your Grandfather's Assembly Line

With mind-blowing efficiency, smart producers now use software to hustle their wares from the lab to the world.

By [Gene Bylinsky](#)

After calisthenics, workers at Toyota plants perform another task before taking their place on the assembly line. On days when the company is introducing changes in the parts they will work with, the workers head into special demonstration rooms where big computer screens instruct them on new assembly sequences. There's a lot of information to grasp, as the workers rotate among different assembly stations every two hours to reduce ergonomic strain. The screens lay out the data in clear three-dimensional images, thanks to a new kind of manufacturing software: product life-cycle management, or PLM.

For Toyota, whose assembly line prowess—symbolized by the humble kanban card—has been vaunted as the best in the world, the displays represent a major change in philosophy and a huge efficiency boost. Toyota president Fujio Cho has declared that PLM is transforming the company's production system into digital manufacturing.

Toyota is only one of many companies that have embraced PLM as a way of using software to manage a product from the dawn to dusk of its life: from creation through development, manufacturing, testing, and then maintenance in the field. Pioneering users like Pratt & Whitney Canada, General Motors, and IBM have saved hundreds of millions of dollars—IBM alone has saved more than \$700 million—and speeded up product-development time by as much as one-third. Boeing is installing a PLM package for its new 7E7 Dreamliner passenger jet. Not all the users are corporate giants...